Washington State Department of Transportation

Memorandum

Date: April 4, 2000

From: Project Engineer

Subject: SR 510 OL-2497
SR 5 Overcrossing
MP 0.00 to MP 0.17
DEVIATION No. 2 FOR APPROVAL

Thru: Region Project Development

To: Harold Peterfeso

We request your review and approval of the following deviation for the project identified above. The Olympic Region has reviewed this deviation and concurs.

Overview

The purpose of this I-3 project is to improve capacity on SR 510 by replacing the existing overcrossing structure and modifying the existing on and off connections to SR 5. The existing interchange does not provide an adequate level of service for current traffic demands

Existing conditions

The existing SR 510 interchange is a signalized diamond interchange with off connections that flare to two lanes at the crossroad terminals. SR 510 is two lanes wide as it passes over and terminates at SR 5. SR 5 in the area of the interchange is six lanes wide, three in each direction, with a 24 meter grass median.

Proposed Project

The project will replace the existing two lane SR 510 structure with a six lane structure, widen the SR 5 on connections to two lanes at the crossroad terminals to accept double left-turn lanes from SR 510, and widen the SR 5 off connections at the crossroad terminals to provide additional storage. A northbound SR 5 auxiliary lane will also be provided to accommodate a two lane off connection. The off connection will provide an additional access to southbound SR 510 by connecting to existing Quinault Way.

This project is Stage 1 of a two stage project that will convert the existing diamond interchange configuration to a single point interchange configuration when level of service warrants.

Full design level will be used for the project.

Deviation Description

SN-W Ramp, SR 5 Southbound On Connection Fill Slopes

Full Design Level calls for 1:6 fill slopes for fill heights less than 3 meters. The region proposes the use of 1:4 fill slopes for a length of 40 meters on the SN-W southbound on connection, SR5 MP 111.78 to MP 111.80 Lt.. Fill heights range in height from 2.4 to 2.9 meters.

Other Options Considered

Two options were considered.

Option 1 - Construct the embankment with 1:6 Fill Slopes. The proposed design will utilize the area adjacent to the ramp to collect and infiltrate stormwater collected from SR 510 north of the new structure. The construction of 1:6 fill slopes would fill a proposed drainage basin. Approximately 0.01 hectares of right of way would be required to construct 1:6 fill slopes.

Option 2 - Install guardrail or barrier. Fill slopes of 1:2 could be utilized with the installation of guardrail preserving the desired drainage basin. This design however, would place a fixed object within the Design Clear Zone and present a hazard to the traveling public.

Accident Summary

From January 1, 1995 to December 31, 1999, there were 9 accidents including 5 injury and 4 non-injury associated with the ramp. Of the 10 accidents six were at the intersection of the ramp and SR 510 involving turning movements and one rear-ender. Three of the accidents were single vehicle run off the road accidents. None of the run off the road accidents involved injuries.

Run off the road accidents are not prevalent at this location.

Recommendation

The 1:4 slopes are recoverable slopes. The risk of run off the road accidents is minimal due to the speeds anticipated at this portion of the ramp. 1:4 fill slopes will allow the area adjacent to the ramp to be utilized for stormwater and require no right of way. There will not be any hazards on the 1:4 fill slopes and Design Clear Zone has been met.

Therefore the Region requests a deviation to construct 1:4 slopes as described above.